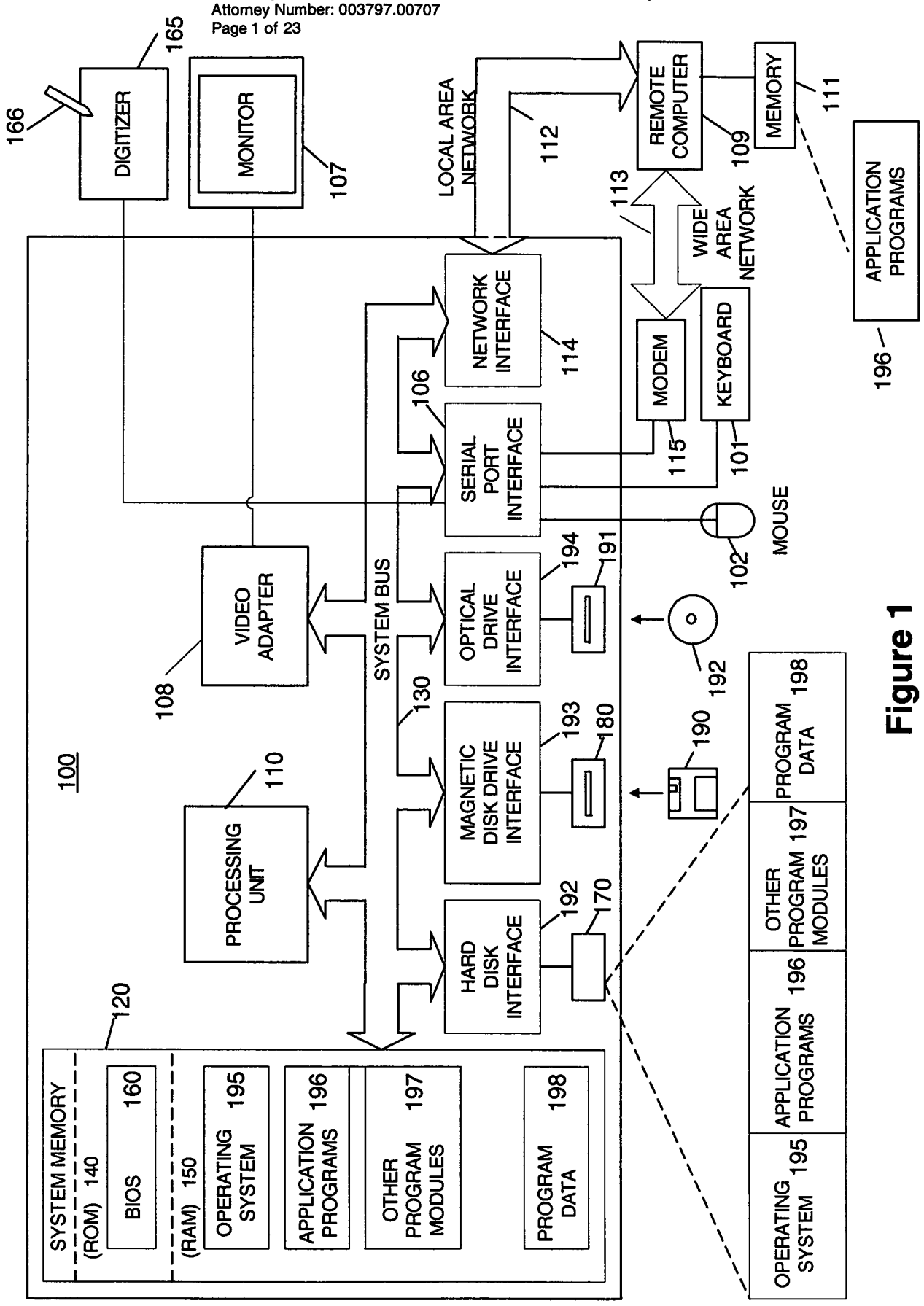

DIGITIZER
165
166
MONITOR
107
LOCAL AREA NETWORK
112
REMOTE COMPUTER
109
MEMORY
111
APPLICATION PROGRAMS
196
113
WIDE AREA NETWORK
NETWORK INTERFACE
114
MODEM
115
KEYBOARD
101
SERIAL PORT INTERFACE
106
MOUSE
102
VIDEO ADAPTER
108
SYSTEM BUS
OPTICAL DRIVE INTERFACE
194
191
192
MAGNETIC DISK DRIVE INTERFACE
193
180
190
130
PROCESSING UNIT
110
HARD DISK INTERFACE
192
170
100
120
SYSTEM MEMORY
(ROM) 140
BIOS 160
(RAM) 150
OPERATING SYSTEM 195
APPLICATION PROGRAMS 196
OTHER PROGRAM MODULES 197
PROGRAM DATA 198
OPERATING SYSTEM 195
APPLICATION PROGRAMS 196
OTHER PROGRAM MODULES 197
PROGRAM DATA 198

Figure 1

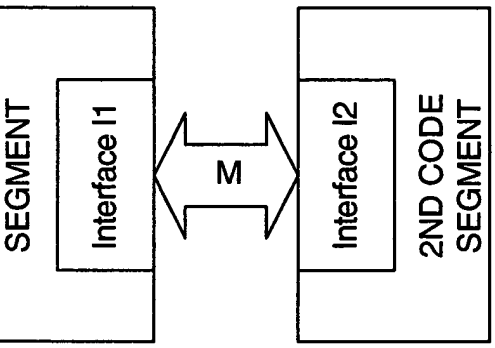


FIGURE 1C

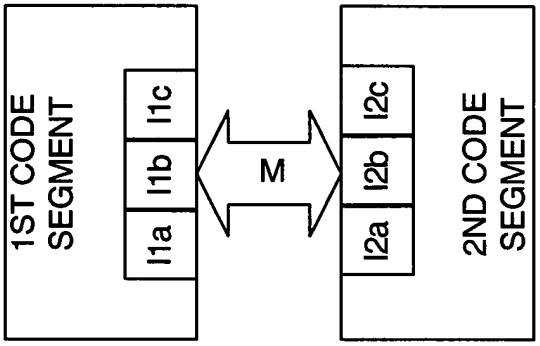


FIGURE 1E

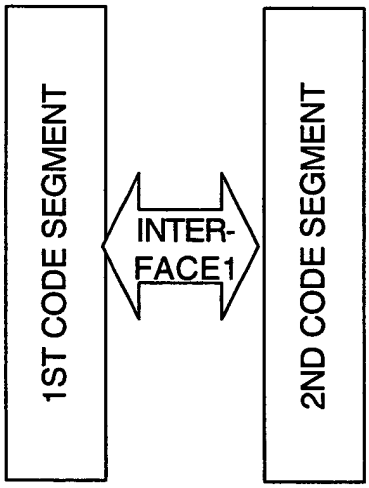


FIGURE 1B

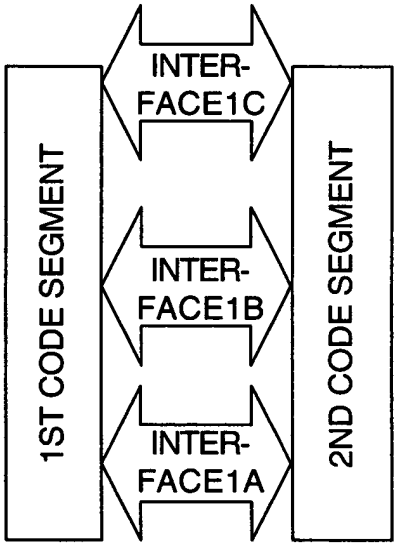


FIGURE 1D

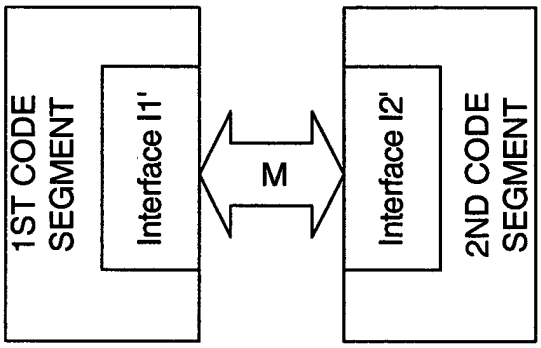


FIGURE 1G

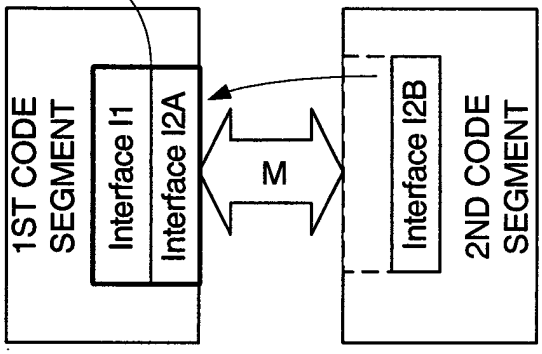


FIGURE 1I

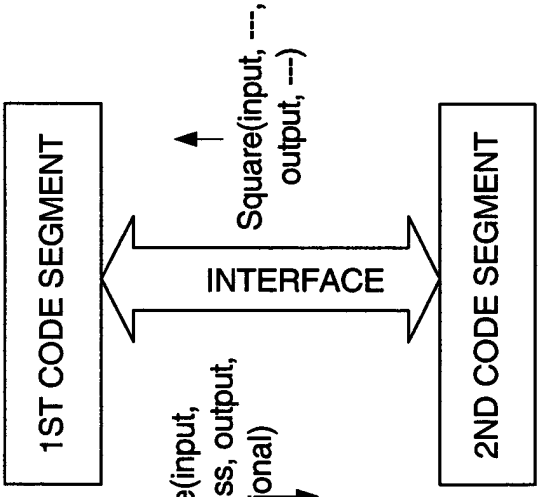


FIGURE1F

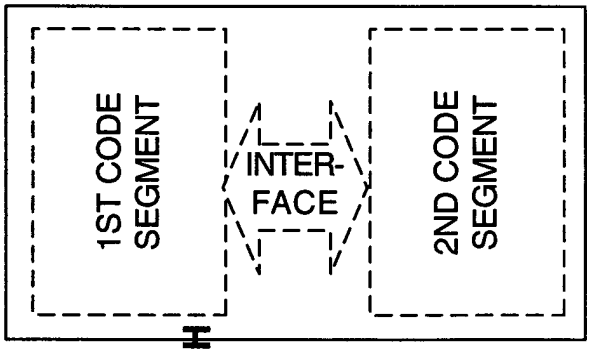
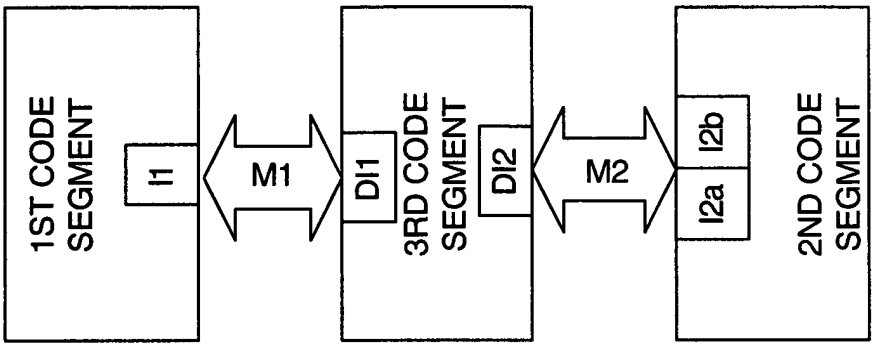


FIGURE 1H

FIGURE 1K



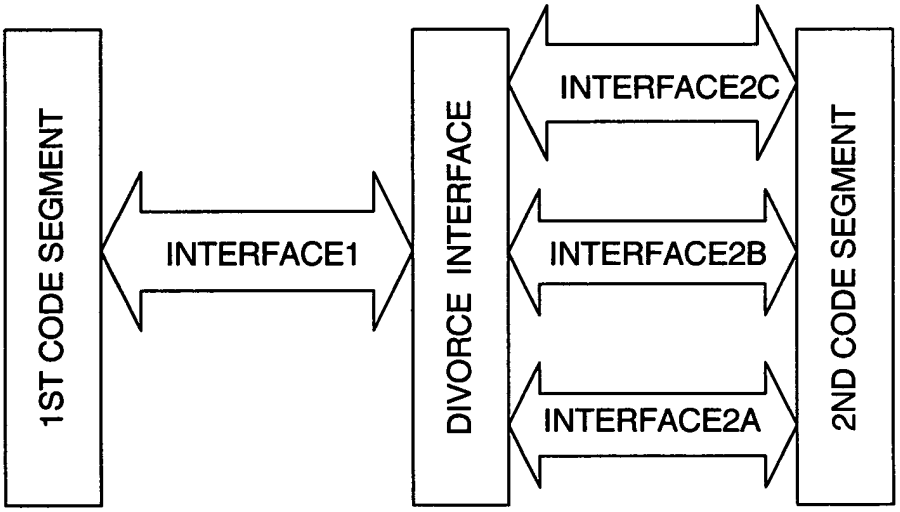


FIGURE 1J

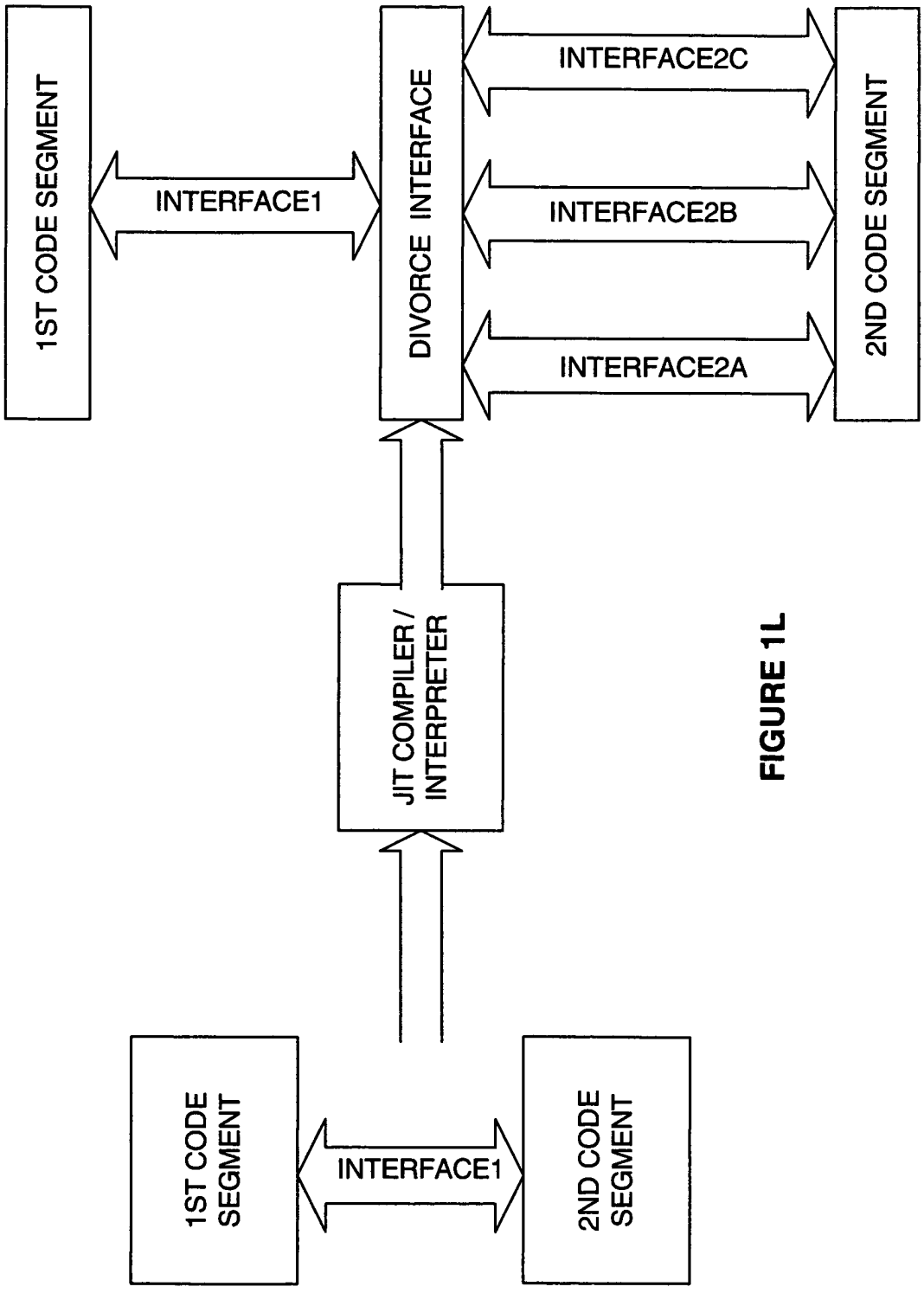

1ST CODE SEGMENT
INTERFACE1
DIVORCE INTERFACE
INTERFACE2C
INTERFACE2B
INTERFACE2A
2ND CODE SEGMENT
JIT COMPILER / INTERPRETER
1ST CODE SEGMENT
INTERFACE1
2ND CODE SEGMENT

FIGURE 1L

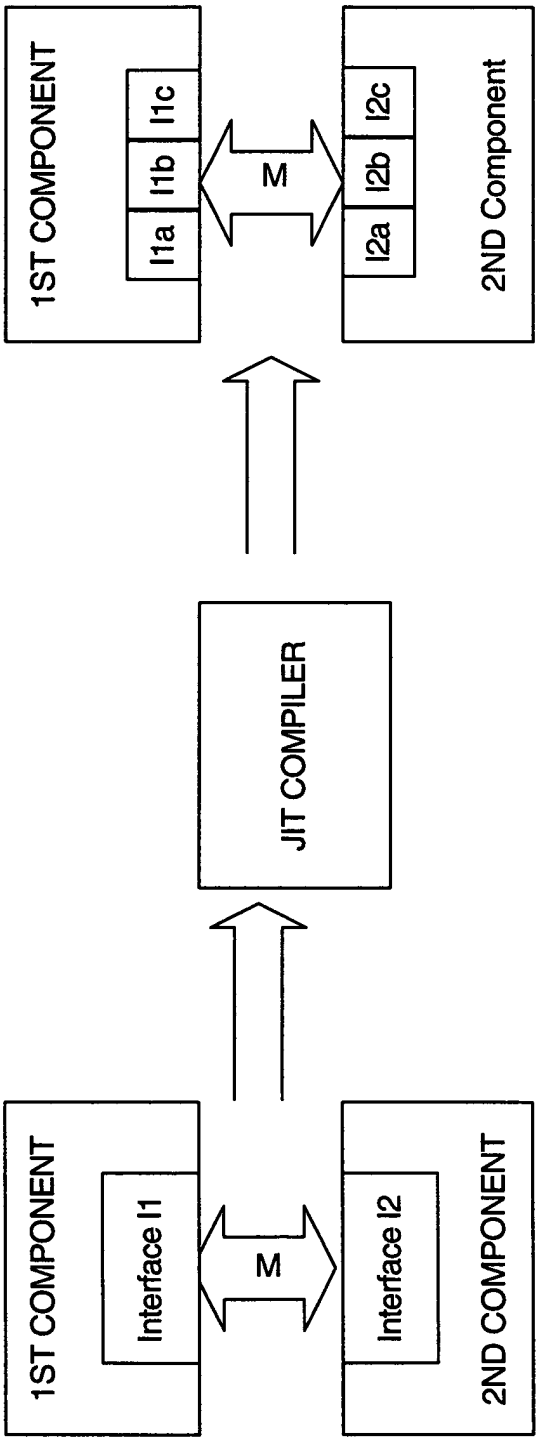
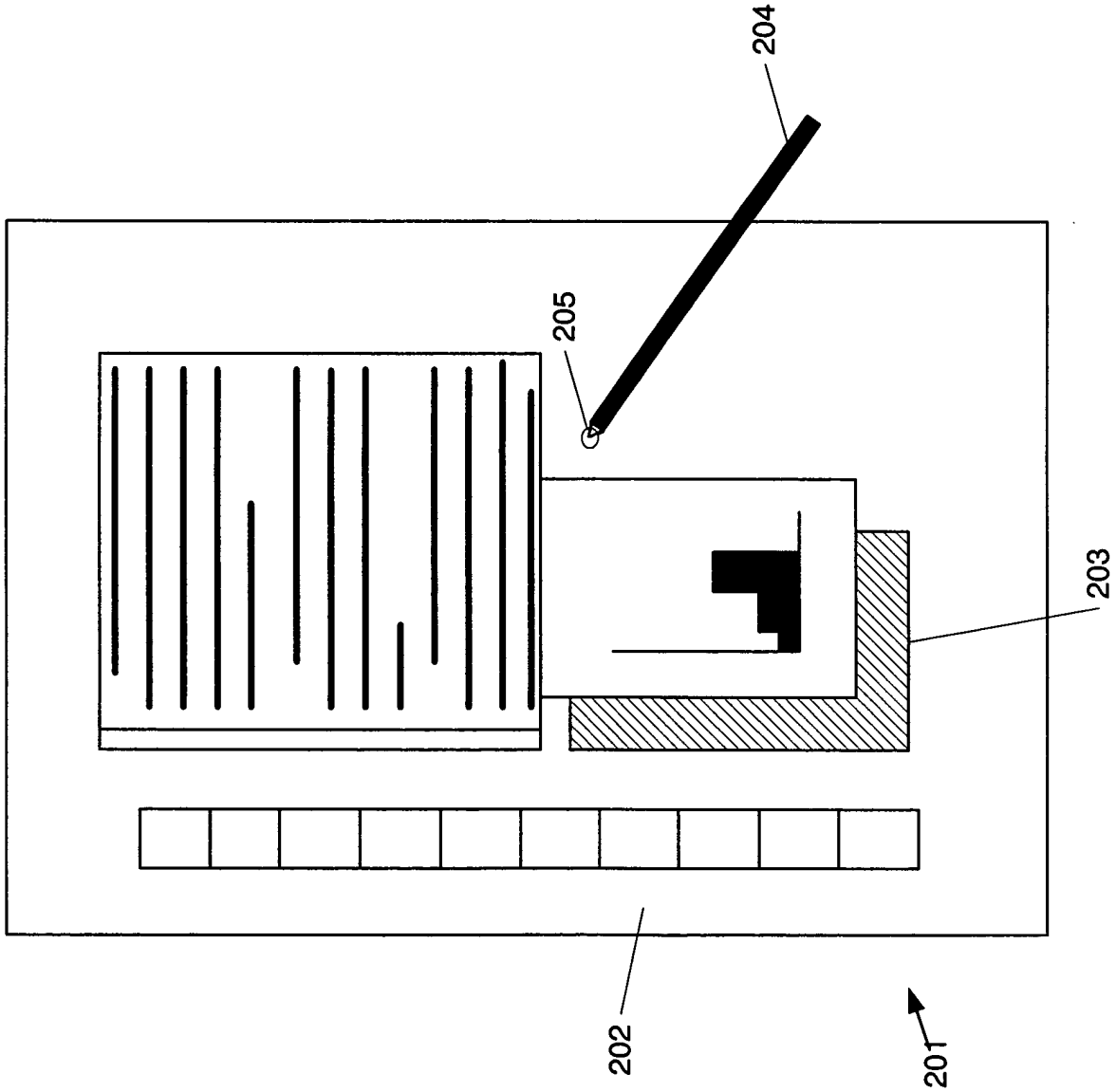

1ST COMPONENT
I1a
I1b
I1c
M
I2a
I2b
I2c
2ND Component
JIT COMPILER
1ST COMPONENT
Interface I1
M
Interface I2
2ND COMPONENT

FIGURE 1M

Figure 2



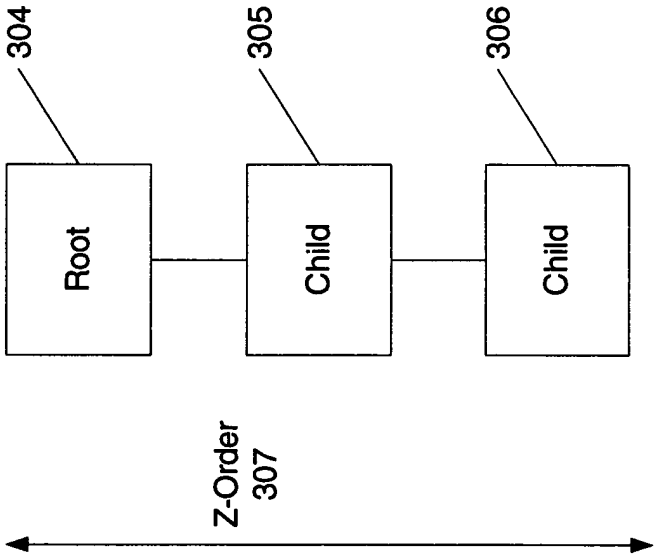


Figure 3B

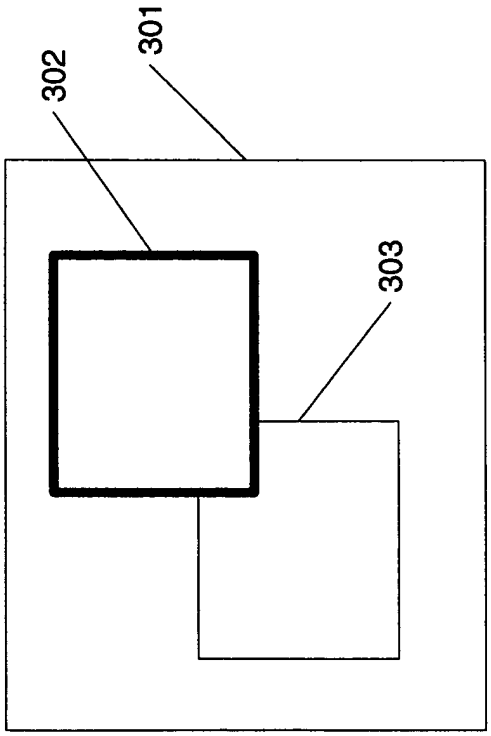


Figure 3A

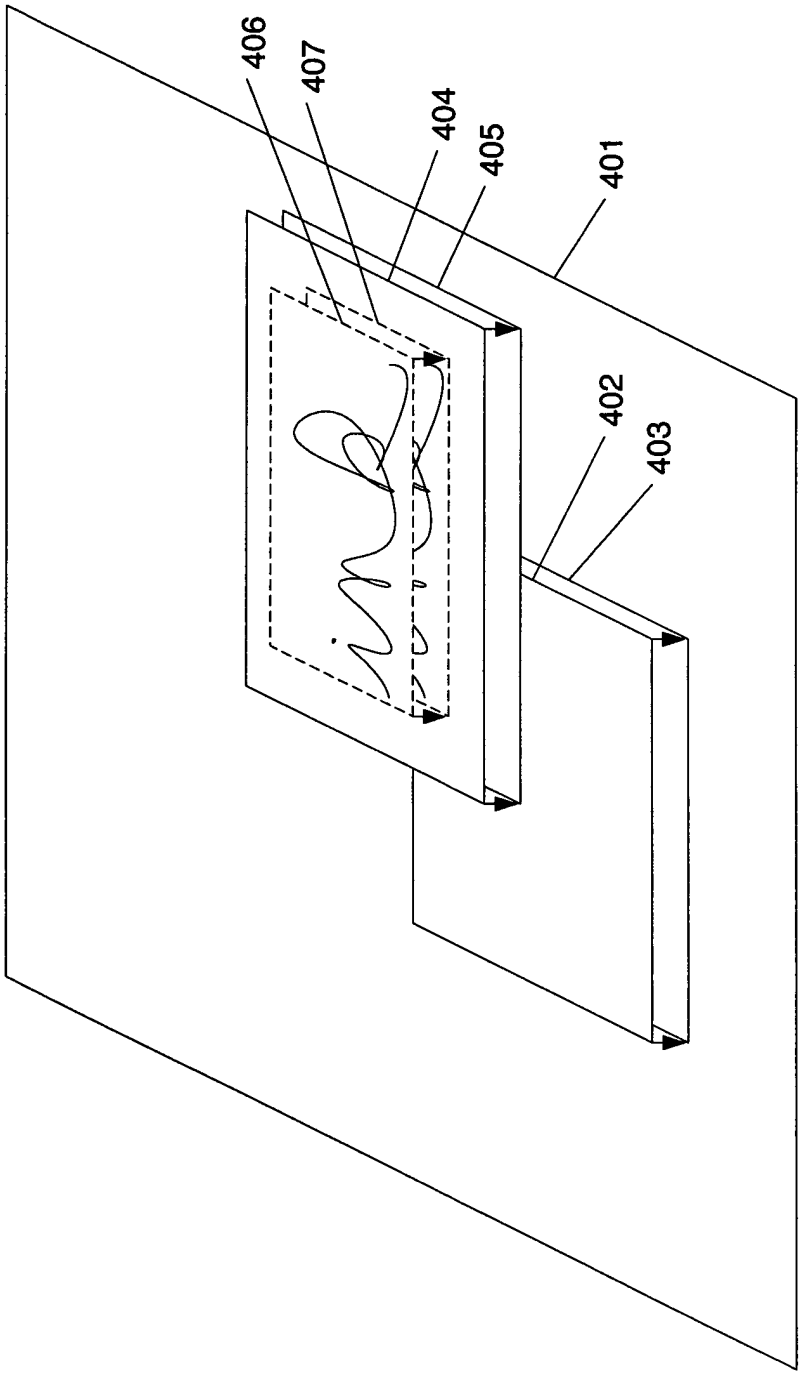


Figure 4

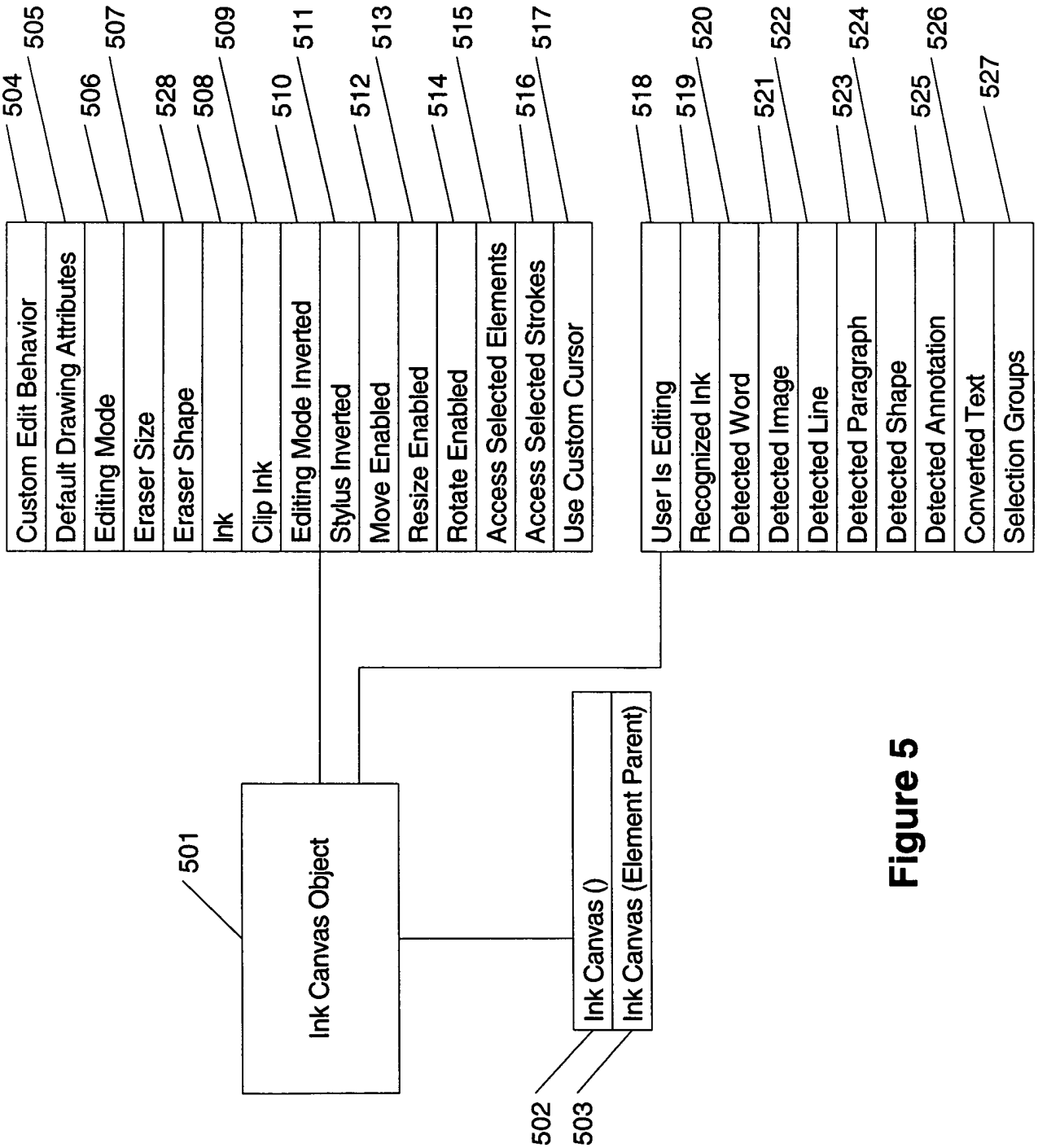

Custom Edit Behavior
Default Drawing Attributes
Editing Mode
Eraser Size
Eraser Shape
Ink
Clip Ink
Editing Mode Inverted
Stylus Inverted
Move Enabled
Resize Enabled
Rotate Enabled
Access Selected Elements
Access Selected Strokes
Use Custom Cursor
User Is Editing
Recognized Ink
Detected Word
Detected Image
Detected Line
Detected Paragraph
Detected Shape
Detected Annotation
Converted Text
Selection Groups
504
505
506
507
528
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
501
Ink Canvas Object
Ink Canvas ()
Ink Canvas (Element Parent)
502
503

Figure 5

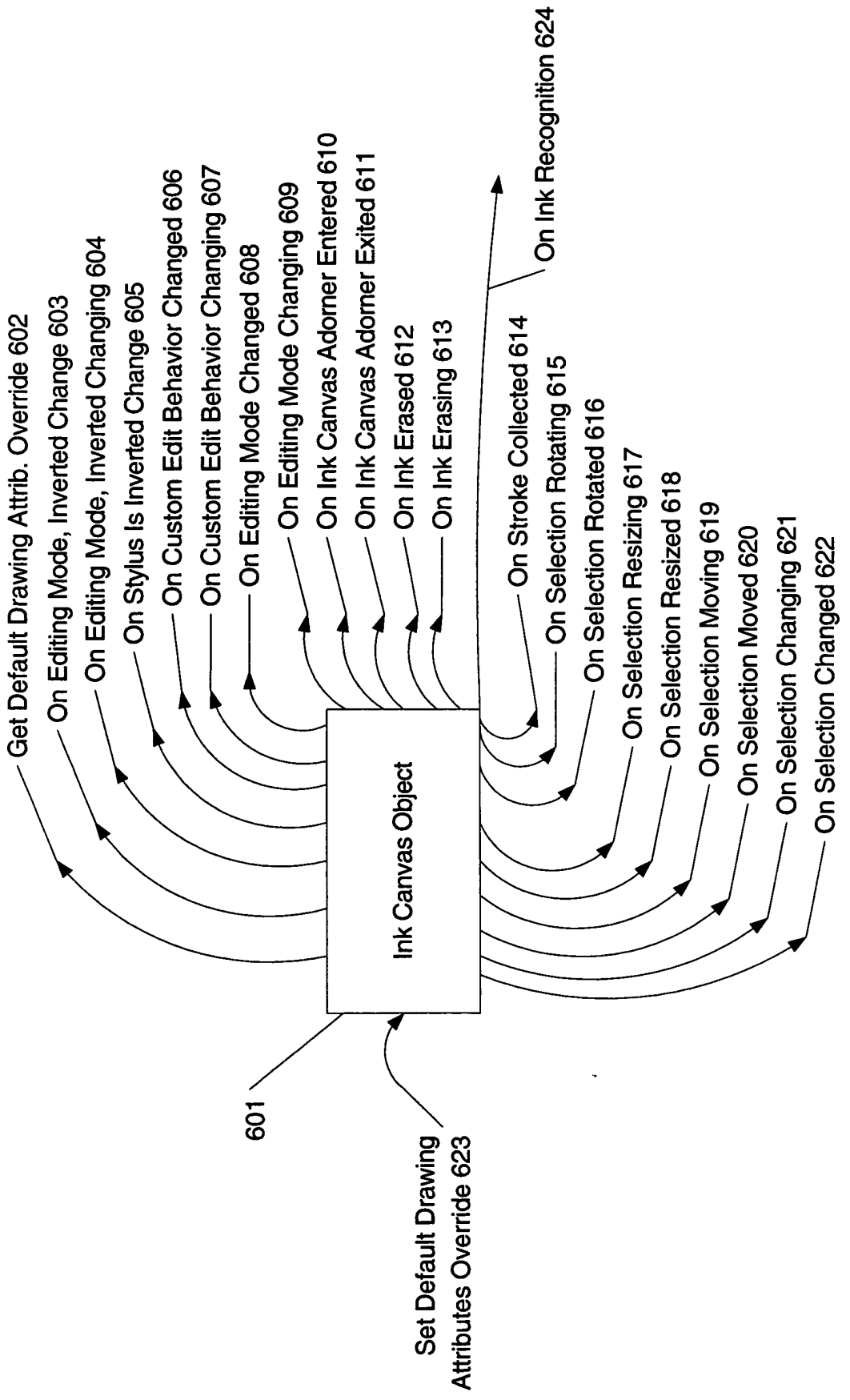
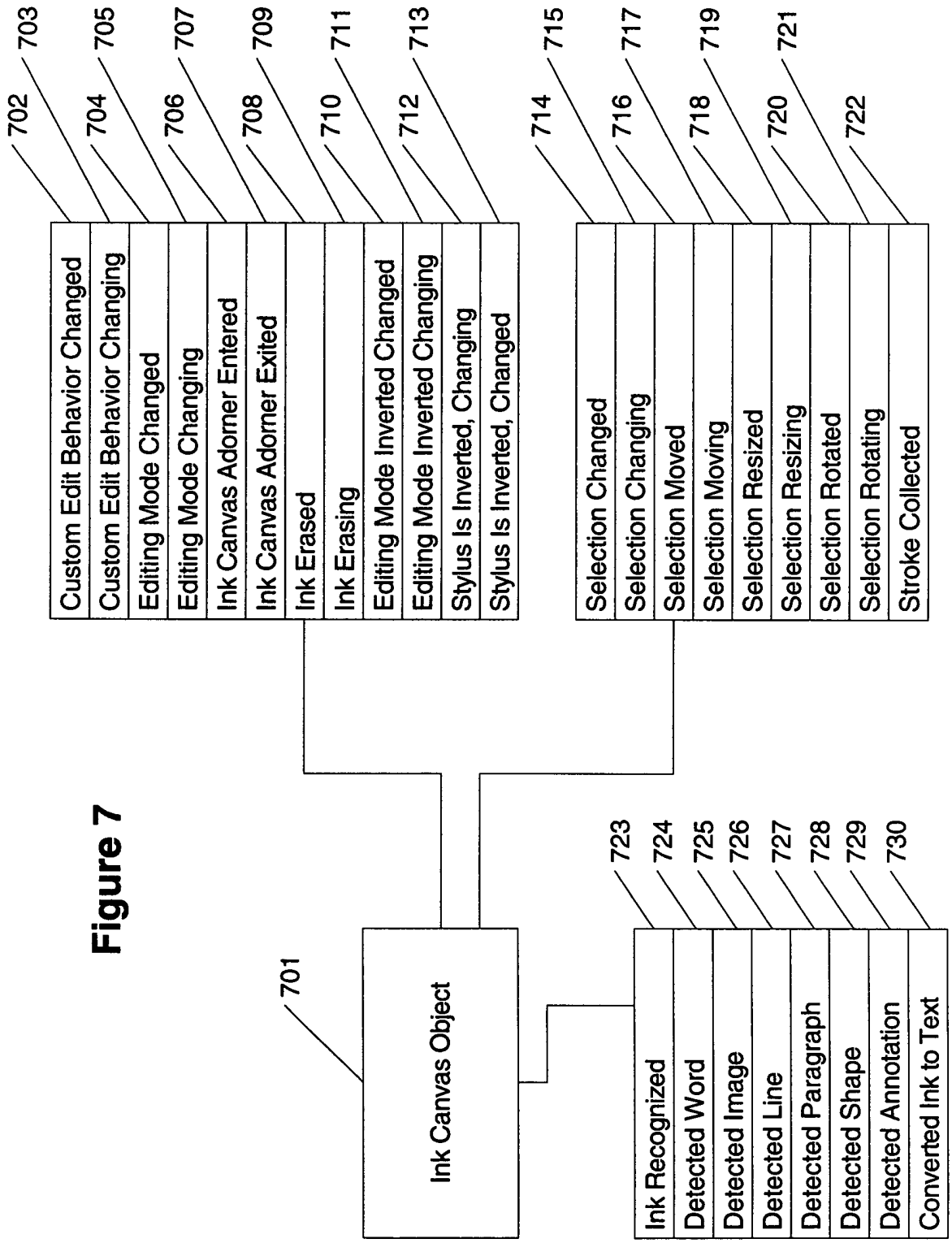

Get Default Drawing Attrib. Override 602
On Editing Mode, Inverted Change 603
On Editing Mode, Inverted Changing 604
On Stylus Is Inverted Change 605
On Custom Edit Behavior Changed 606
On Custom Edit Behavior Changing 607
On Editing Mode Changed 608
On Editing Mode Changing 609
On Ink Canvas Adorner Entered 610
On Ink Canvas Adorner Exited 611
On Ink Erased 612
On Ink Erasing 613
On Stroke Collected 614
On Ink Recognition 624
On Selection Rotating 615
On Selection Rotated 616
On Selection Resizing 617
On Selection Resized 618
On Selection Moving 619
On Selection Moved 620
On Selection Changing 621
On Selection Changed 622
Ink Canvas Object
601
Set Default Drawing Attributes Override 623

Figure 6


Ink Canvas Object
701
Custom Edit Behavior Changed
Custom Edit Behavior Changing
Editing Mode Changed
Editing Mode Changing
Ink Canvas Adorner Entered
Ink Canvas Adorner Exited
Ink Erased
Ink Erasing
Editing Mode Inverted Changed
Editing Mode Inverted Changing
Stylus Is Inverted, Changing
Stylus Is Inverted, Changed
Selection Changed
Selection Changing
Selection Moved
Selection Moving
Selection Resized
Selection Resizing
Selection Rotated
Selection Rotating
Stroke Collected
Ink Recognized
Detected Word
Detected Image
Detected Line
Detected Paragraph
Detected Shape
Detected Annotation
Converted Ink to Text
702
703
704
705
706
707
708
709
710
711
712
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719
720
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729
730

Figure 7

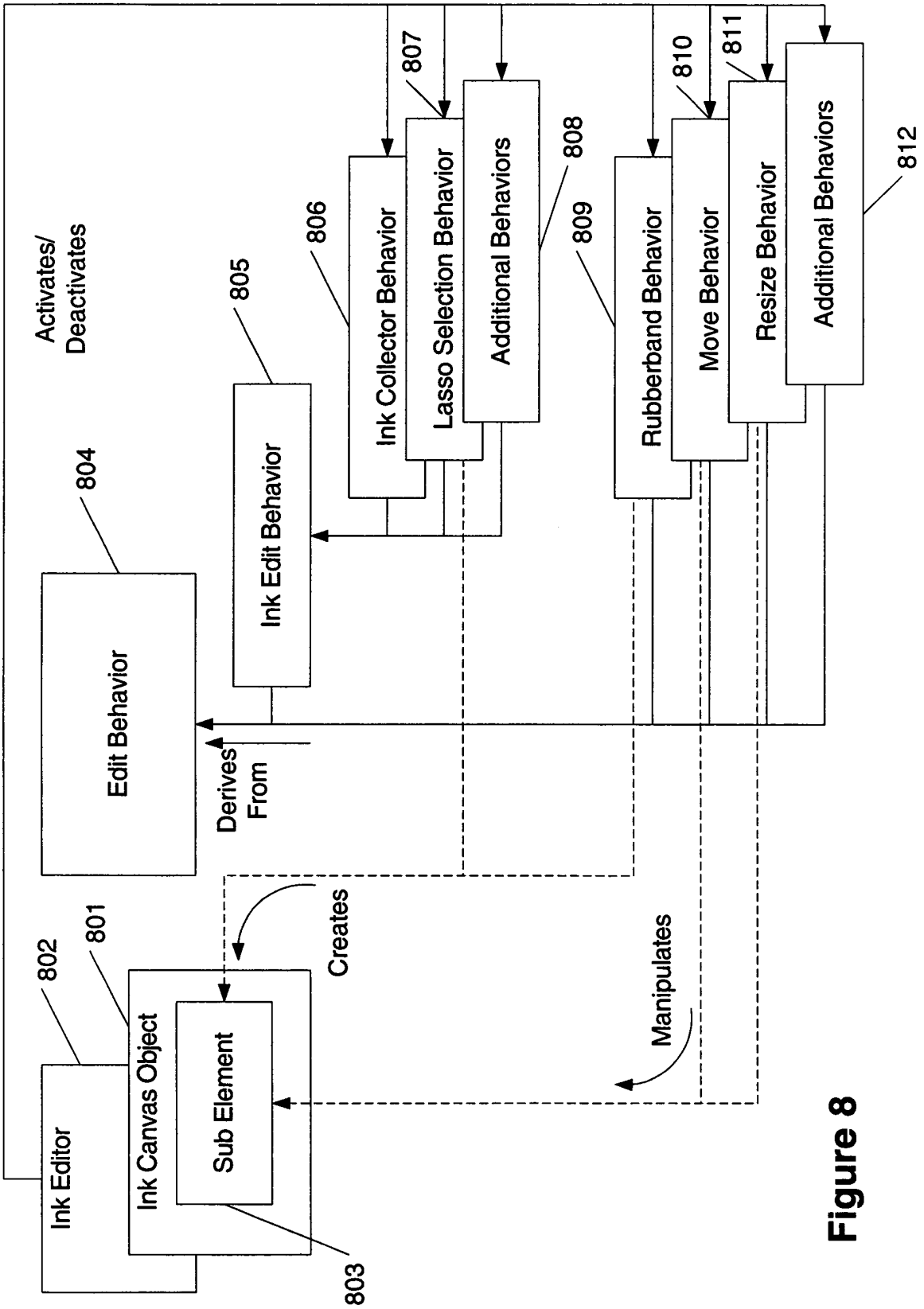

Activates/
Deactivates
807
810
811
806
808
809
805
812
Ink Collector Behavior
Lasso Selection Behavior
Additional Behaviors
Rubberband Behavior
Move Behavior
Resize Behavior
Additional Behaviors
Ink Edit Behavior
804
Edit Behavior
Derives
From
Creates
Manipulates
802
801
Ink Editor
Ink Canvas Object
Sub Element
803

Figure 8

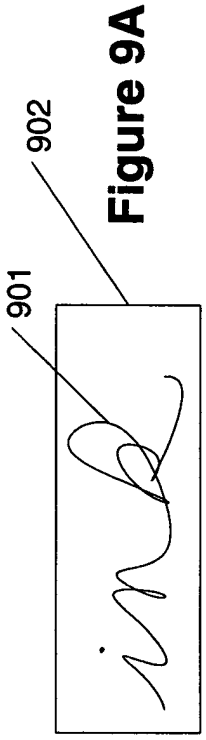


Figure 9A

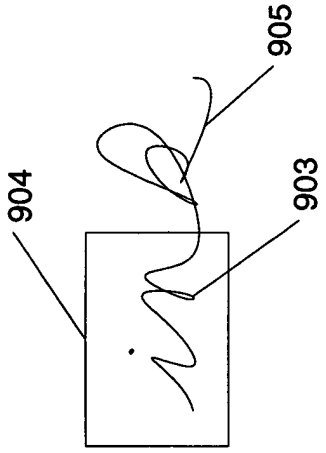


Figure 9B

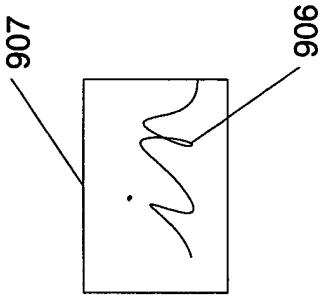
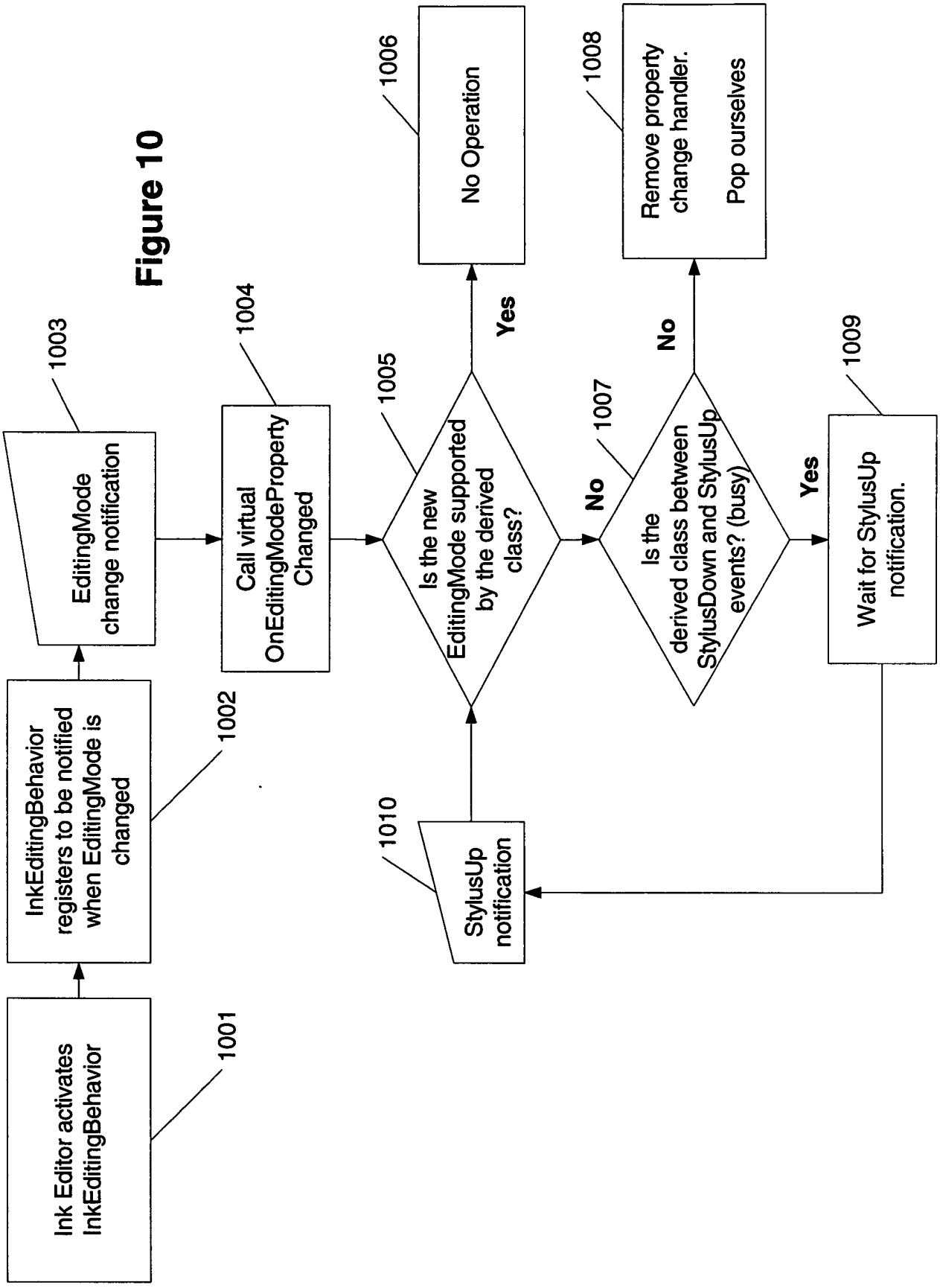


Figure 9C

Figure 10


Ink Editor activates InkEditingBehavior
1001
InkEditingBehavior registers to be notified when EditingMode is changed
1002
EditingMode change notification
1003
Call virtual OnEditingModeProperty Changed
1004
Is the new EditingMode supported by the derived class?
1005
Yes
No Operation
1006
No
Is the derived class between StylusDown and StylusUp events? (busy)
1007
No
Remove property change handler.
Pop ourselves
1008
Yes
Wait for StylusUp notification.
1009
StylusUp notification
1010

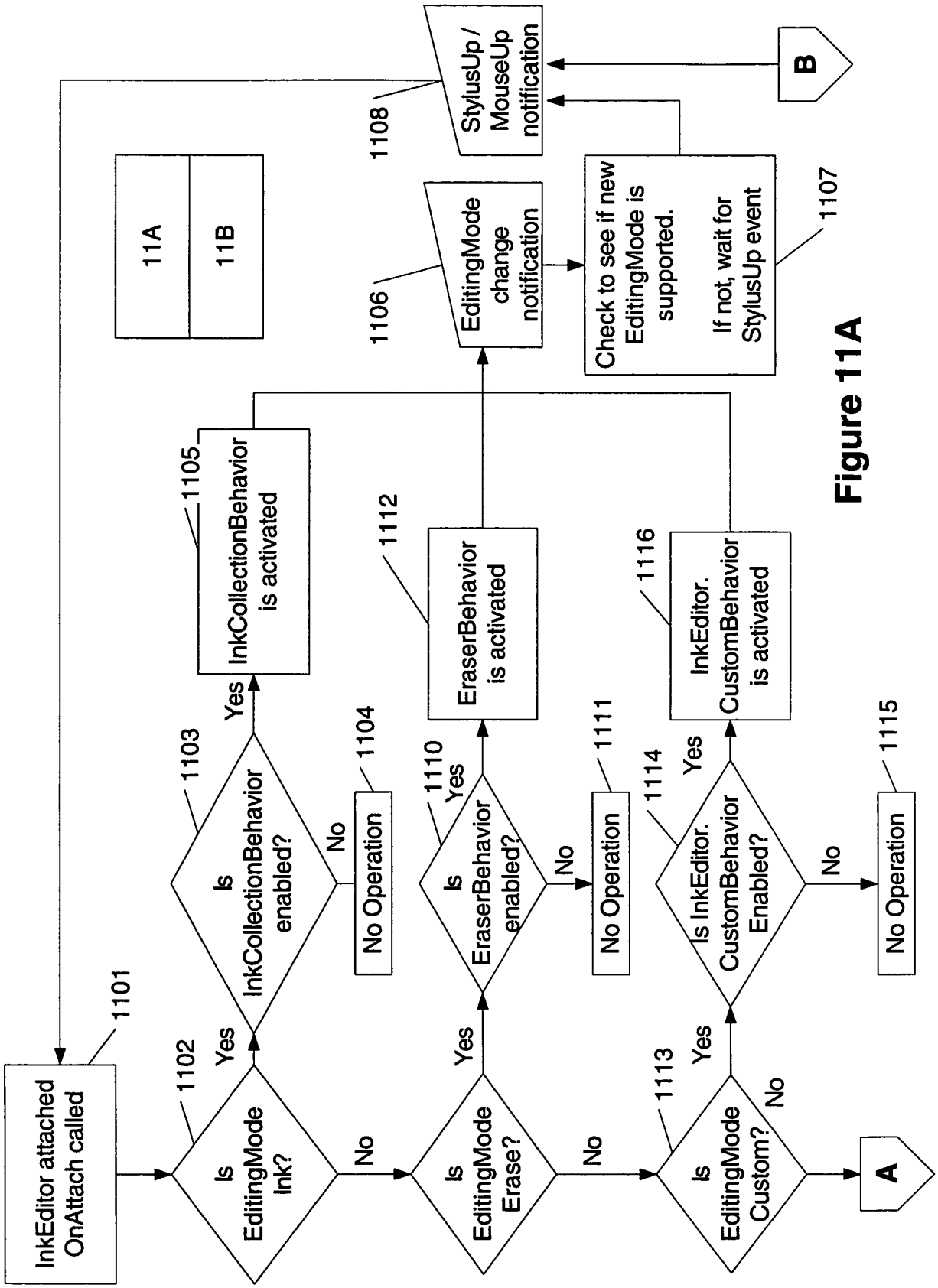

InkEditor attached OnAttach called
1101
Is EditingMode Ink?
1102
Yes
No
Is InkCollectionBehavior enabled?
1103
Yes
No
No Operation
1104
InkCollectionBehavior is activated
1105
Is EraserBehavior enabled?
1110
Yes
No
No Operation
1111
EraserBehavior is activated
1112
Is EditingMode Erase?
Yes
No
Is InkEditor. CustomBehavior Enabled?
1114
Yes
No
No Operation
1115
InkEditor. CustomBehavior is activated
1116
Is EditingMode Custom?
1113
Yes
No
A
B
StylusUp / MouseUp notification
1108
EditingMode change notification
1106
Check to see if new EditingMode is supported.
If not, wait for StylusUp event
1107
11A
11B

Figure 11A

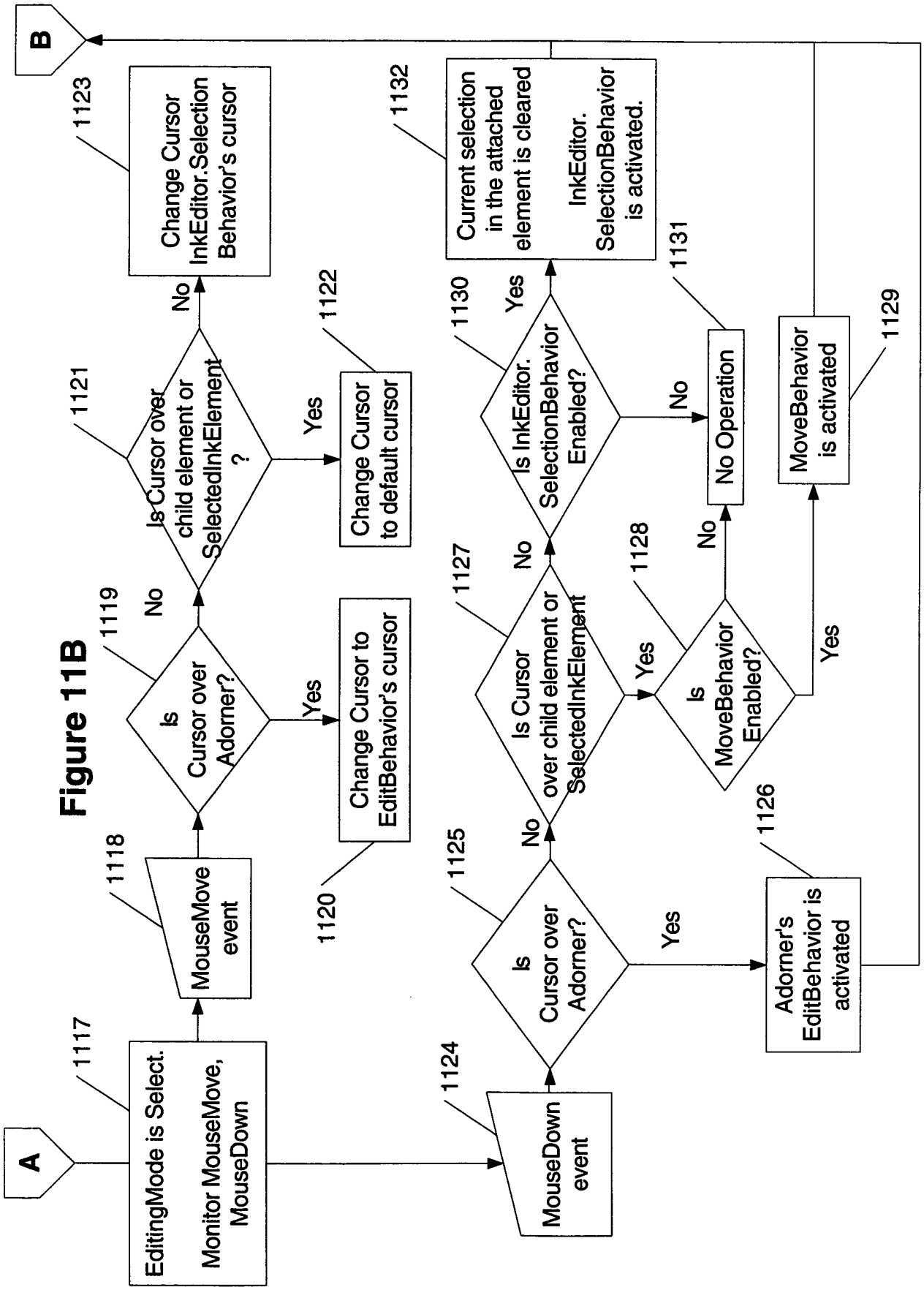

A
B
1117
EditingMode is Select.
Monitor MouseMove, MouseDown
1118
MouseMove event
1119
Is Cursor over Adorner?
No
Yes
1120
Change Cursor to EditBehavior's cursor
1121
Is Cursor over child element or SelectedInkElement ?
No
Yes
1122
Change Cursor to default cursor
1123
Change Cursor InkEditor.Selection Behavior's cursor
1124
MouseDown event
1125
Is Cursor over Adorner?
No
Yes
1126
Adorner's EditBehavior is activated
1127
Is Cursor over child element or SelectedInkElement
No
Yes
1128
Is MoveBehavior Enabled?
No
Yes
1129
MoveBehavior is activated
1130
Is InkEditor. SelectionBehavior Enabled?
No
Yes
1131
No Operation
1132
Current selection in the attached element is cleared
InkEditor. SelectionBehavior is activated.

Figure 11B

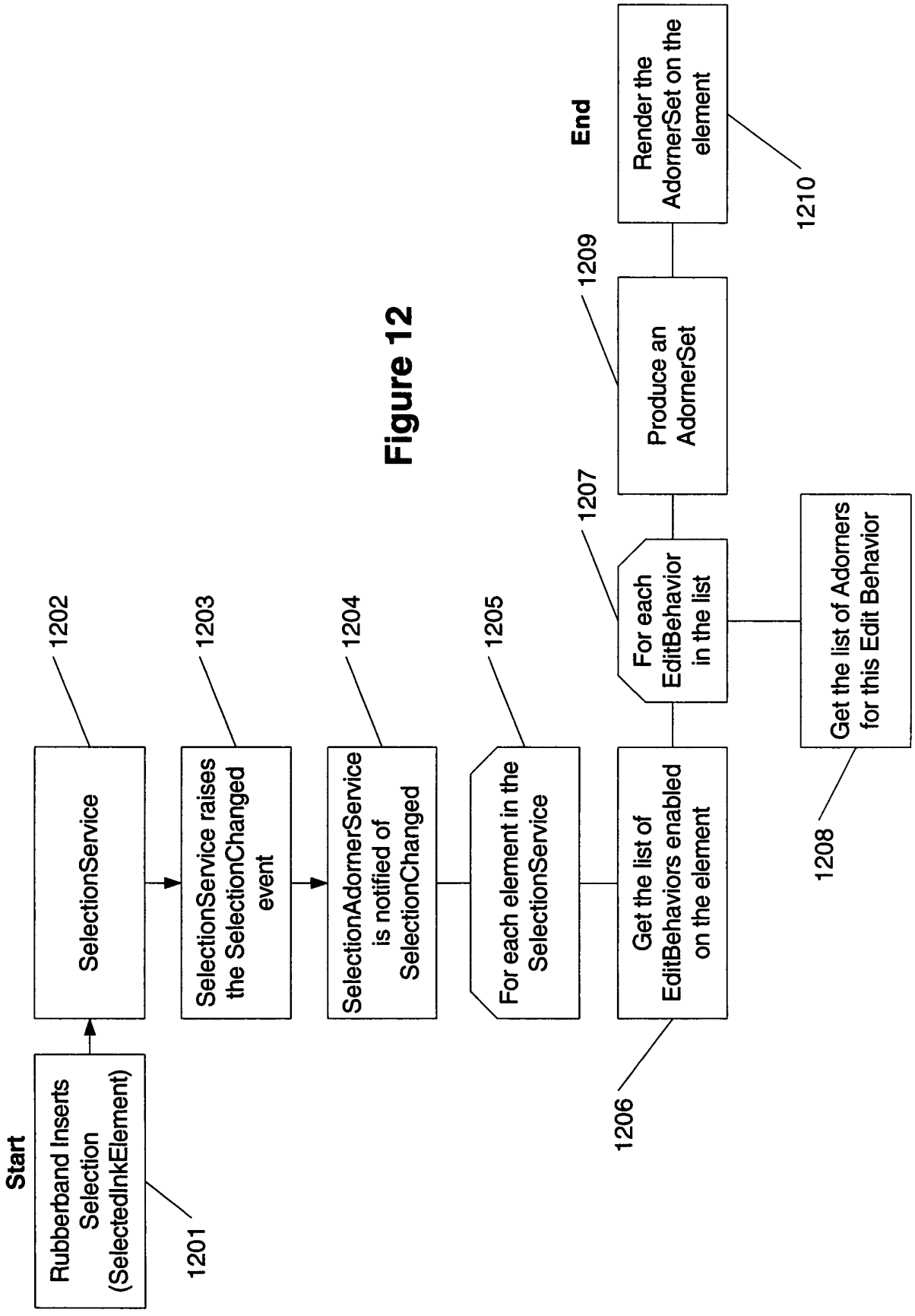

Start
Rubberband Inserts Selection (SelectedInkElement)
1201
SelectionService
1202
SelectionService raises the SelectionChanged event
1203
SelectionAdornerService is notified of SelectionChanged
1204
For each element in the SelectionService
1205
Get the list of EditBehaviors enabled on the element
1206
For each EditBehavior in the list
1207
Get the list of Adorners for this Edit Behavior
1208
Produce an AdornerSet
1209
Render the AdornerSet on the element
1210
End

Figure 12

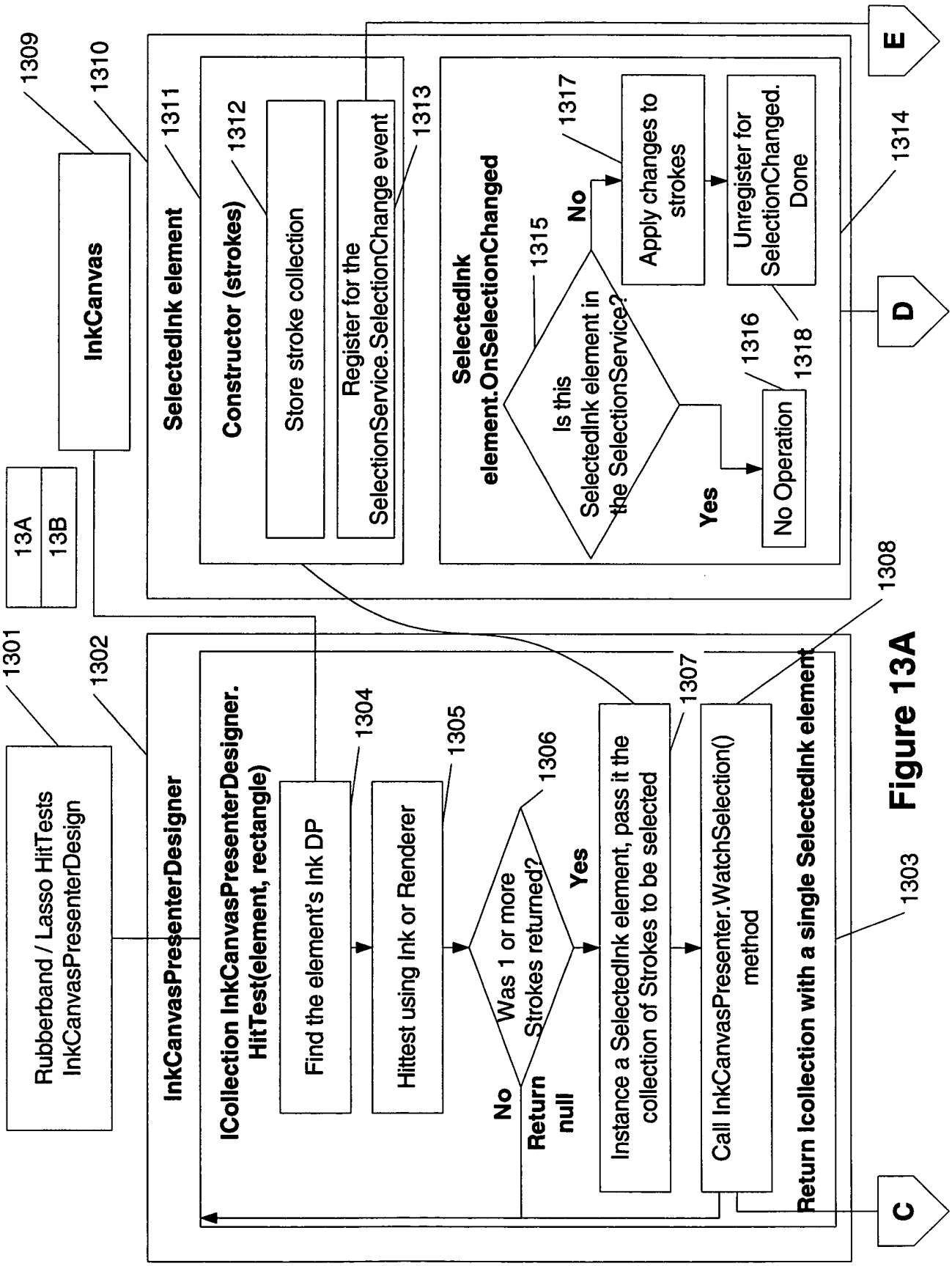

1309
1310
1311
1312
1313
1314
1315
1316
1317
1318
1301
1302
1303
1304
1305
1306
1307
1308
InkCanvas
SelectedInk element
Constructor (strokes)
Store stroke collection
Register for the SelectionService.SelectionChange event
SelectedInk element.OnSelectionChanged
Is this SelectedInk element in the SelectionService?
No
Apply changes to strokes
Unregister for SelectionChanged. Done
Yes
No Operation
13A
13B
E
D
C
Rubberband / Lasso HitTests InkCanvasPresenterDesign
InkCanvasPresenterDesigner
ICollection InkCanvasPresenterDesigner. HitTest(element, rectangle)
Find the element's Ink DP
Hittest using Ink or Renderer
Was 1 or more Strokes returned?
No
Return null
Yes
Instance a SelectedInk element, pass it the collection of Strokes to be selected
Call InkCanvasPresenter.WatchSelection() method
Return Icollection with a single SelectedInk element

Figure 13A

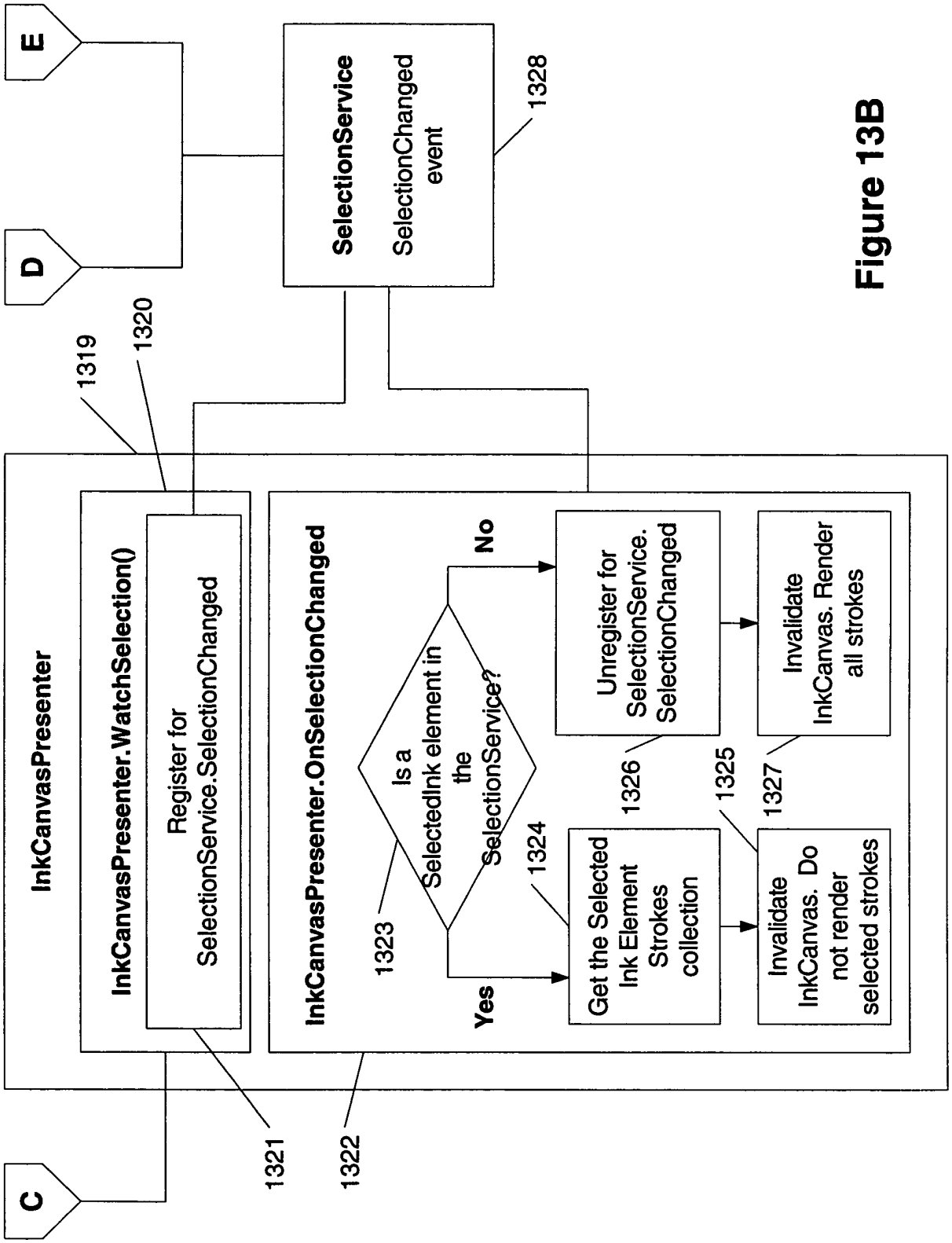
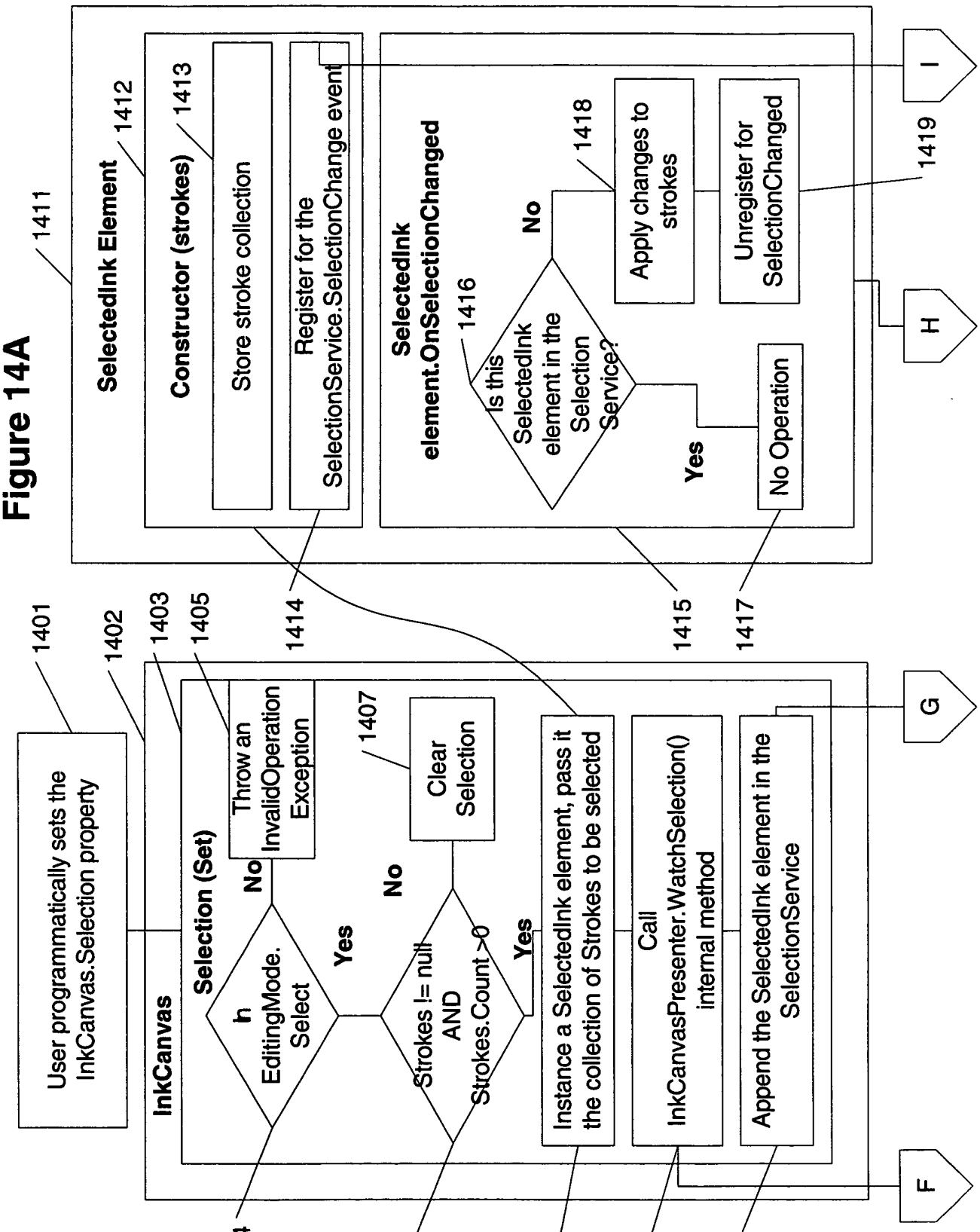

E
D
C
SelectionService
SelectionChanged event
1328
1319
1320
InkCanvasPresenter
InkCanvasPresenter.WatchSelection()
Register for SelectionService.SelectionChanged
InkCanvasPresenter.OnSelectionChanged
Is a SelectedInk element in the SelectionService?
1323
No
Yes
Unregister for SelectionService. SelectionChanged
Invalidate InkCanvas. Render all strokes
Get the Selected Ink Element Strokes collection
Invalidate InkCanvas. Do not render selected strokes
1324
1326
1325
1327
1321
1322

Figure 13B

Figure 14A


1411
SelectedInk Element
1412
Constructor (strokes)
1413
Store stroke collection
Register for the SelectionService.SelectionChange event
1414
SelectedInk element.OnSelectionChanged
1416
Is this SelectedInk element in the Selection Service?
No
1418
Apply changes to strokes
Unregister for SelectionChanged
1419
Yes
No Operation
1415
1417
I
H
G
F
1401
User programmatically sets the InkCanvas.Selection property
1402
InkCanvas
1403
Selection (Set)
1405
Throw an InvalidOperation Exception
No
h EditingMode. Select
Yes
1404
1407
Clear Selection
No
Strokes != null AND Strokes.Count >0
Yes
1406
Instance a SelectedInk element, pass it the collection of Strokes to be selected
1408
Call InkCanvasPresenter.WatchSelection() internal method
1409
Append the SelectedInk element in the SelectionService
1410

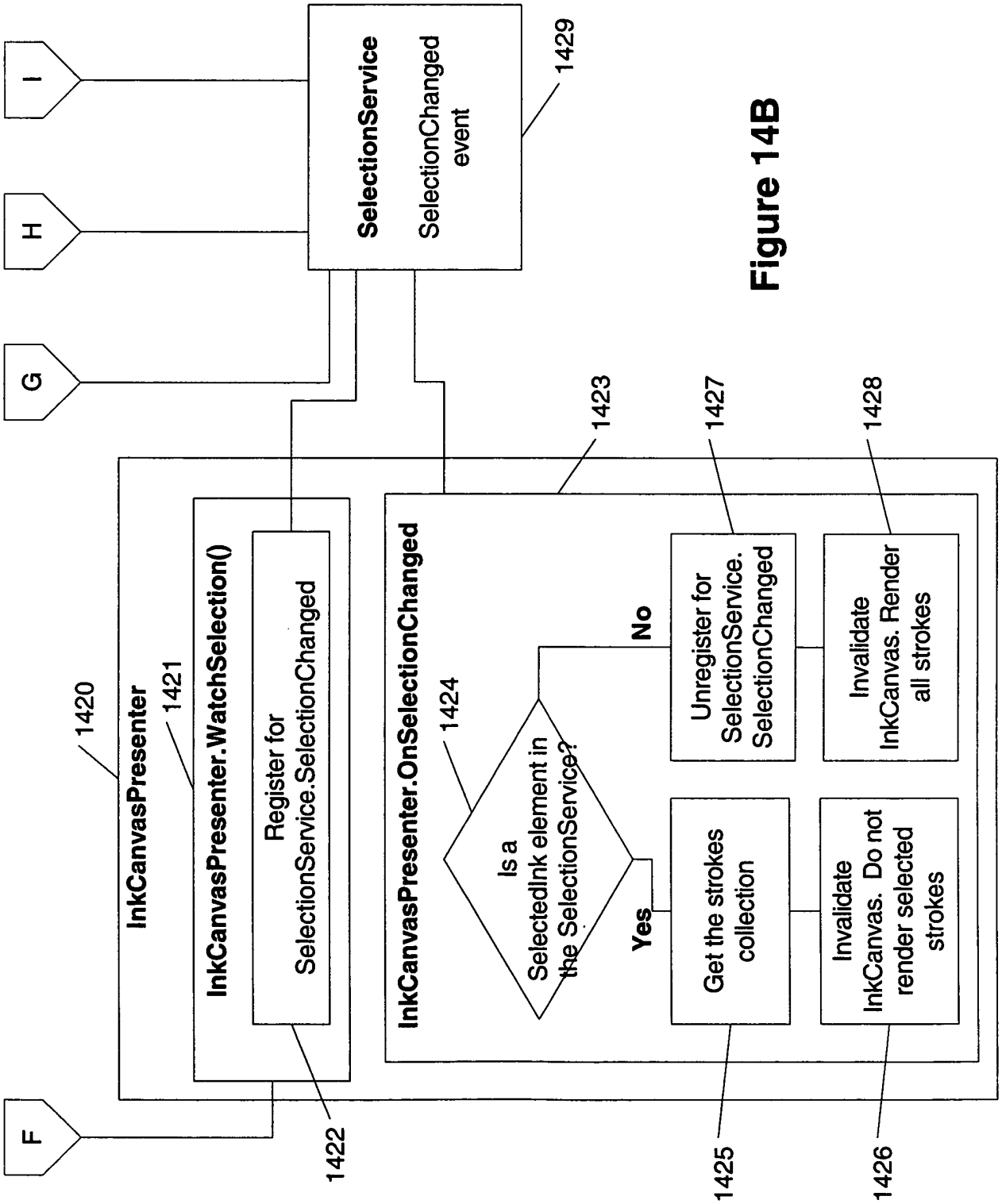

I
H
G
F
SelectionService
SelectionChanged event
1429
InkCanvasPresenter
1420
InkCanvasPresenter.WatchSelection()
1421
Register for SelectionService.SelectionChanged
1422
InkCanvasPresenter.OnSelectionChanged
1423
Is a SelectedInk element in the SelectionService?
1424
No
Yes
Unregister for SelectionService. SelectionChanged
1427
Invalidate InkCanvas. Render all strokes
1428
Get the strokes collection
1425
Invalidate InkCanvas. Do not render selected strokes
1426

Figure 14B

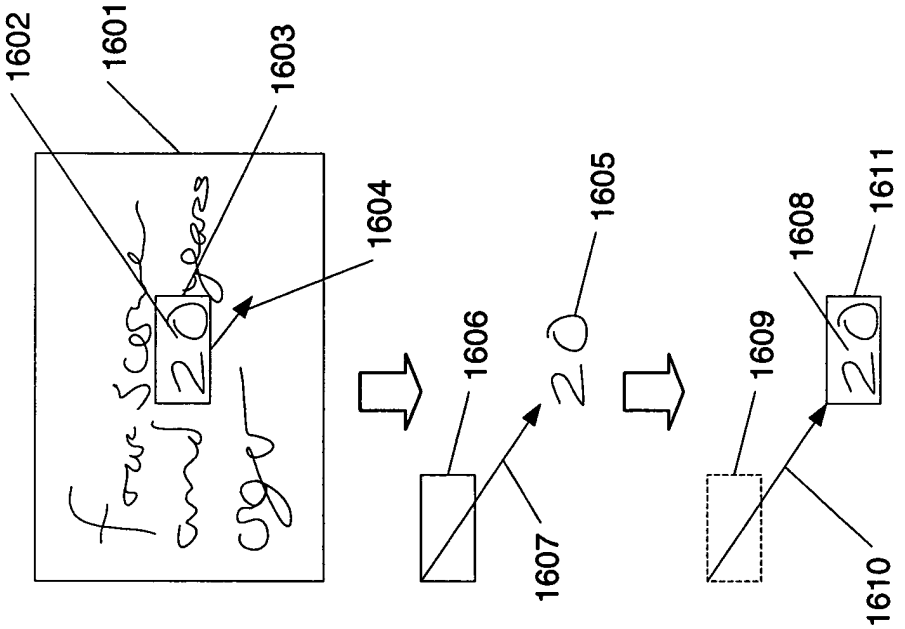


Figure 16

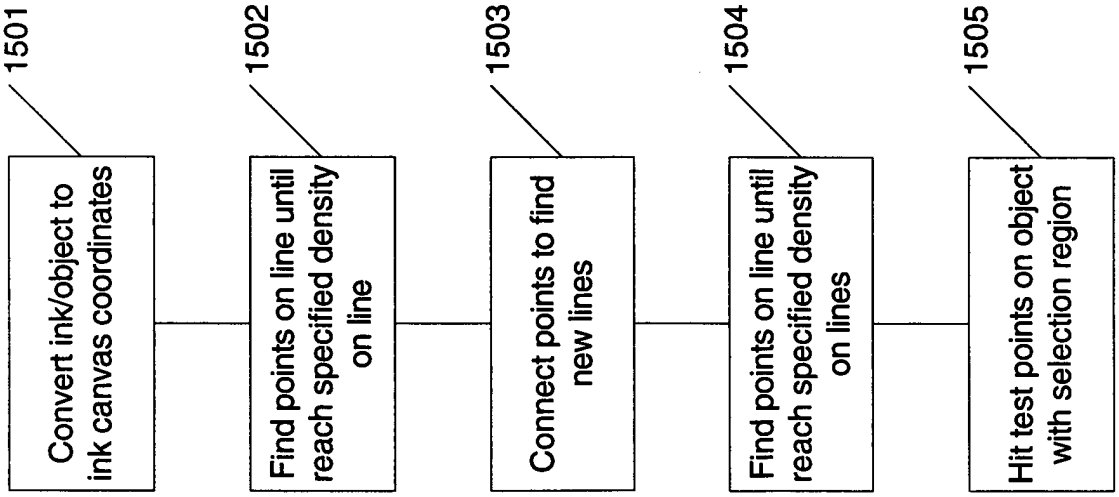


Figure 15